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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BUTZEL LONG				
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EXAMINER				
REDDY, KARUNA P				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
03/23/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENT@BUTZEL.COM  
BOUDRIE@BUTZEL.COM

### Office Action Summary

**Application No.**

10/594,784

**Applicant(s)**

ONO ET AL

**Examiner**

KARUNA P. REDDY

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2010 and 15 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5, 8, 10, 12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 8, 10, 12 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 1 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on 1/6/2010 and 2/12/2010 has been entered.

Claims 1, 8 and 14 are amended; claims 2-4, 6-7, 9, 11 and 13 are cancelled.

Accordingly, claims 1, 5, 8, 10, 12 and 14-16 are currently pending in the application.

2. It is noted that claim identifier for claim 14 should read "currently amended". See MPEP § 714 IIC.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Objections***

4. Claims 1 and 14 are objected to because of the following informalities:

Claim 1 recites "0.1-5 parts by weight of a vulcanizing agent of polyvalent amine compound, and (B) 0.05-10 parts by weight of an antioxidant comprising a thiazole-based compound selected from 2-mercaptobenzothiazole". The recitation of "0.1-5 parts by weight" and "0.05-10 parts by weight" is not consistent with language used in the

originally filed disclosure which states "about 0.1 to about 5 parts by weight" and "about 0.05 to about 10 parts by weight".

Claim 14 recites "the compression set characteristics". The use of term "the" to recite this limitation indicates antecedent basis. Given that there is no antecedent basis for this limitation; applicant is advised to delete "the" from this recitation.

Appropriate clarification and/or correction are required.

***Claim Rejections - 35 USC § 103***

5. Claims 1, 5, 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aonuma et al (US 5,157,083).

Aonuma et al disclose a rubber composition comprising a polymer obtained by adding maleic anhydride or a derivative thereof (abstract) which reads on acrylic elastomer of instant claims. The maleic anhydride derivative used include maleic acid monoalkyl esters such as monomethyl maleate (col. 2, lines 51-55) which reads on aliphatic unsaturated dicarboxylic acid monoalkyl ester. The composition is obtained by adding vulcanizing agents and antioxidants (col. 3, lines 16-18). See table 2, wherein vulcanization occurs in two stages (i.e. primary vulcanization and secondary vulcanization) under heating conditions, and the amount of modified rubber used is 100 parts by weight. The vulcanizate obtained can be used for producing various articles (col. 5, lines 3-20) which reads on article of instant claim 8.

Aonuma et al fail to disclose a composition comprising the specific combination of polyvalent amine compound and thiazole-based compound; amine-based antioxidant; press vulcanization and vulcanization-molded; and wall thickness.

However, Aonuma et al in the general disclosure teach that when sulfur containing vulcanizing agent is used, vulcanizing accelerators are usually used together therewith (col. 3, lines 36-39). Preferred vulcanization accelerators used with sulfur containing vulcanizing agent include thiazole compounds such as 2-mercaptobenzothiazole in amounts of from 0.5 to 5 parts by weight (col. 3, lines 40-54) which reads on thiazole based antioxidant that inhibits oxidative degradation in instant claims. As the antioxidants, when sulfur containing vulcanizing agent is used, antiozonants are preferred. Examples of antiozonant include N-phenyl-N'-isopropyl-p-phenylenediamine in amounts of from 0.1 to 5 parts by weight (col. 4, lines 9-18) which reads on vulcanizing agent of instant claims. Therefore, in light of the teachings in general disclosure of Aonuma et al, it would have been obvious to one skilled in art at the time invention was made to add 2-mercaptobenzothiazole in amounts of from 0.5 to 5 parts by weight, and antiozonant such as N-phenyl-N'-isopropyl-p-phenylenediamine in amounts of from 0.1 to 5 parts by weight, when sulfur based vulcanizing agents are used in the composition, because such a combination of vulcanization accelerator (i.e. reads on thiazole based antioxidant of instant claims, which inhibits oxidative degradation) and antiozonant (which reads on vulcanizing agent of instant claims) is preferred by Aonuma et al.

With respect to amine-based antioxidant, Aonuma et al teach in the general disclosure that employment of antioxidants is preferred from the viewpoint of heat resistance. When sulfur containing vulcanizing agent is used, suitable examples of antioxidants include amine compounds such as 4,4'-bis( $\alpha,\alpha$ -dimethylbenzyl)diphenylamine (col. 4, lines 20-25) which reads on amine based antioxidant of instant claim 5. Therefore, in light of the teachings in general disclosure, it would have been

obvious to one skilled in art at the time invention was made to add amine based antioxidants, to the composition, for improved heat resistance.

With respect to press vulcanization and vulcanization-molded; it is noted that instant claims are written in product-by-process form and therefore "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

With respect to wall thickness, given that the composition of Aunoma et al is substantially similar to that of instant claims and the use of vulcanized material in forming various products such as gaskets and O-rings, is recognized by Aunoma et al (col. 5, lines 3-20), it would have been within the scope of a skilled artisan to mold the gasket or O-ring to a desired thickness (such as the thickness in present claims) depending on the end use requirements.

6. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aonuma et al (US 5,157,083) in view of Moriyama et al (US 6,156,849).

The discussion with respect to Aonuma et al in paragraph 5 above is incorporated here by reference.

Aunoma et al are silent with respect to press vulcanization and secondary oven vulcanization.

However, Moriyama et al teach acrylic elastomer comprising fumaric acid mono-lower alkyl ester. It is noted that fumaric acid mono-lower alkyl ester is an isomer of maleic anhydride derivative disclosed in Aunoma et al. The composition comprises diamine compound, vulcanization promoters and can be vulcanization molded into seal members (abstract). The composition is subjected to press vulcanization and then to secondary vulcanization in an oven (col. 6, lines 26-29). Therefore, in light of the teachings in Moriyama et al, it would have been obvious to subject the rubber composition of Aunoma et al to press vulcanization because Aonuma discloses that the rubber composition is vulcanized in two stages and Moriyama has shown successfully that elastomeric compositions comprising acrylic elastomer, prepared from an isomer of maleic anhydride derivative disclosed in Aunoma et al can be subjected to press vulcanization followed by oven vulcanization and one skilled in art would have expected the sequence of press vulcanization and secondary oven vulcanization to work for the composition of Aunoma, motivated by expectation of success.

### ***Response to Arguments***

7. Applicant's arguments with respect to rejection under 35 U.S.C. 103 as set forth in paragraph 3 of office action mailed 10/6/2009 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. P. R./  
Examiner, Art Unit 1796